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Powell County
Limestone Quarry
Abandoned Mine
Reclamation

Powell County Limestone Quarry

Abandoned Mine Reclamation Project

Environmental Assessment

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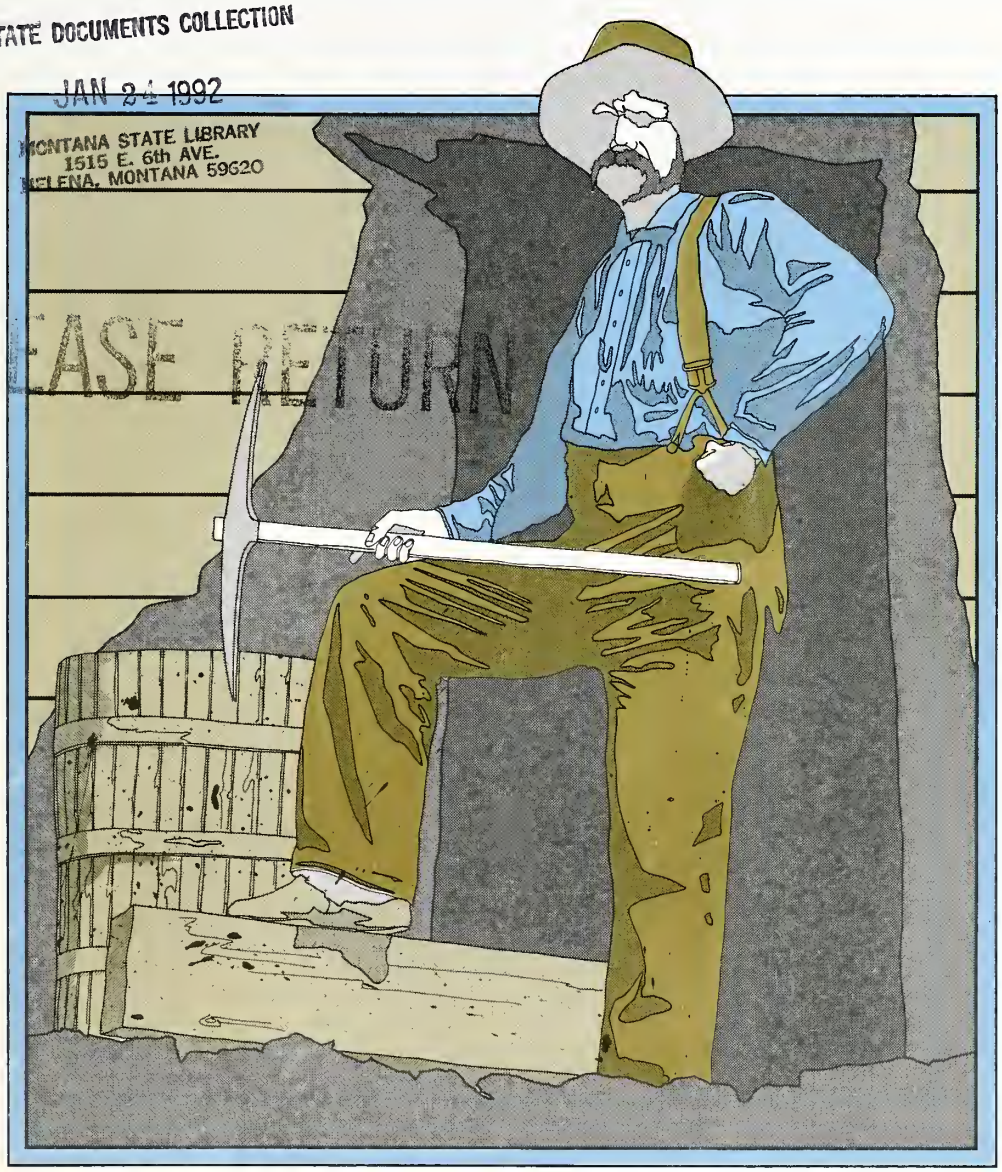

Montana Department of State Lands
Abandoned Mine Reclamation Bureau
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ENVIRONMENTAL ASSESSMENT

Powell County Limestone Quarry

Abandoned Mine Reclamation Project

Powell County, Montana

Prepared By

ABANDONED MINE RECLAMATION BUREAU
MONTANA DEPARTMENT OF STATE LANDS

In Cooperation with

United States Department of Interior
Office of Surface Mining Reclamation and Enforcement

FEBRUARY, 1991

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CHAPTER I. INTRODUCTION

A. Purpose and Need for the Action

The Montana Department of State Lands (MDSL), Abandoned Mine Reclamation Bureau (AMRB) has elected to study the Limestone Quarry, Powell County, to determine means whereby environmental problems and potential human health and safety concerns can be minimized or eliminated. The project is proposed for funding under Title IV of the Surface Mining and Control Act (SMCRA) of 1977, and administered by the Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE).

Many hazards to public health and safety exist at the quarry site. Further, sources of environmental degradation are prominent as a result of past mining practices. The following undesirable conditions resulting from past mining practices require relief.

* Unsound structures, buildings and other site debris.
* Dangerous mine openings.
* Exposed piles of lime waste and waste rock.
* Hazardous, unprotected highwalls.
* Disrupted aesthetics creating a visual nuisance.

The proposed reclamation of the Powell County Limestone Quarry would eliminate existing safety and health hazards to persons entering the site. Reclamation would also improve visual aesthetics and reduce sources of environmental degradation. The purpose of this reclamation project is summarized in the following goals and objectives.

* Clean up site debris, dilapidated structures and unsound buildings to eliminate potential site safety hazards.
* Eliminate potential safety hazards associated with dangerous mine openings.
* Reduce or eliminate safety hazard resulting from unprotected highwalls.
* Revegetate devegetated lime spoils and mining disturbed soils.
* Reduce erosion and runoff of lime spoils, waste rock, and devegetated soils.
* Improve mining-disturbed land productivity.
* Enhance site aesthetics.
* Preserve the limestone kiln structure.

The OSMRE Field Office Director has been requested to approve a Federal construction grant in the amount of $ 174,800 to implement an abandoned mine land reclamation project and accomplish the purpose described above.

B. Project Background/General Information

Features in the vicinity of the Powell County Limestone Quarry are illustrated in Figure 1. The quarry site is approximately 15 air miles directly east of Helena, and 2 miles west of the town of Elliston, Montana. The quarry site is highly visible from Highway 12.

The Powell County Limestone Quarry produced limestone for agricultural and commercial purposes from the turn of the century to the late 1960's. Limestone was mined and milled at the site, and constituted the most important source of quicklime and hydrated lime in the state of Montana (HRA). The State Historic Preservation Office considers the quarry to be the largest and longest lime mining and processing operation in the state (Historic Reaserch Association, 1988). Operations at the quarry site ceased when the mill building was destroyed by fire in the late 1960's. Attempts to rebuild the operation were unsuccessful.

The total area of mining-disturbed land resulting from previous quarry operations is approximately 19 acres. Land surrounding the quarry site is privately owned, primarily undeveloped, and used for livestock grazing. Surface and mineral ownership rights are held by C. Graveley, H. King, and the Burlington Northern Rail Road.

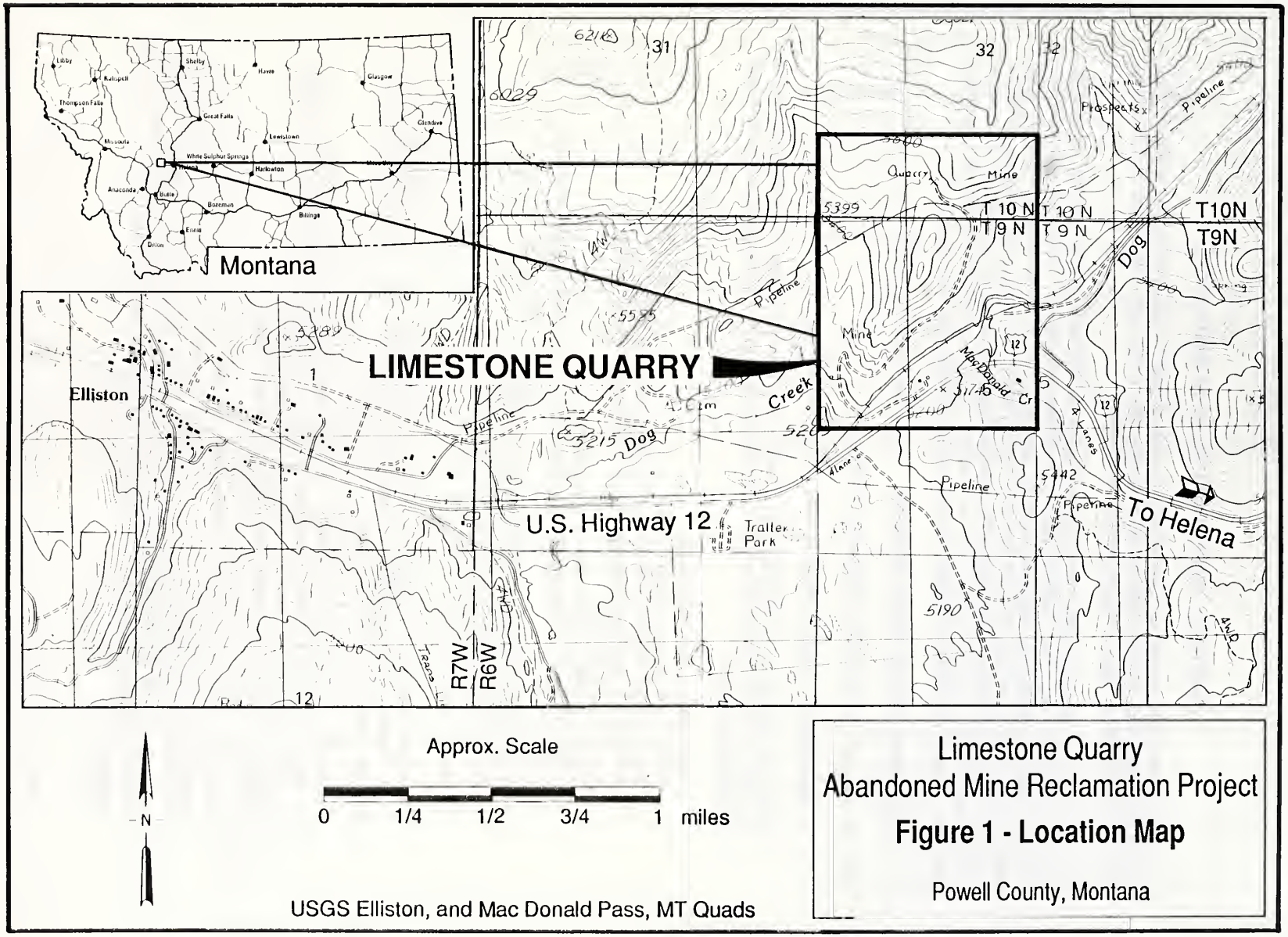
In addition to previously stated mining related problems, the noxious weed knapweed has invaded areas where soils are mining disturbed.

C. Existing/Related Environmental Documents

A search was conducted by the Natural Resource Information System program staff at the Montana State Library for existing and related Environmental Assessments and Environmental Impact Statements relative to the Powell County Limestone Quarry site. The search revealed some of the following environmental documents which were consulted.

The final environmental impact statement (EIS) on the "Approval of State and Indian Reclamation Program Grants Under Title IV of the Surface Mining Control and Reclamation Act of 1977," was issued by the Office of Surface Mining Reclamation and Enforcement in November 1983. The EIS describes and analyzes the environmental impacts that would result from approval of State or Tribal grants. It concentrates on the adverse/beneficial impacts and standard reclamation activities associated with eight major categories of abandoned coal mine problems in the United States. This EIS has little in relationship to the Powell County Limestone Quarry due to the project being a hard rock mine and not a coal mine.

The U.S. Forest Service, Helena National Forest, "Environmental Impact Statement for the Helena National Forest Land and Resource Management Plan" April 1986, analyzes alternative forest plans for the Helena National Forest. The Powell County Limestone Quarry environmental assessment and proposed work is consistent with this EIS.



Limestone Quarry
Abandoned Mine Reclamation Project
Figure 1 - Location Map

Powell County, Montana

CHAPTER II. DESCRIPTION OF THE ALTERNATIVES

All reclamation alternatives under consideration for the Powell County Limestone Quarry project involve nineteen acres of mining disturbed land located in Sections 32, T10N, R6W, and Section 5, T9N, R6W, Powell County, Montana. Figure 2 details specific site features.

Future land uses for the project area may include recreation and livestock grazing. For the surrounding area, uses may include recreation, livestock grazing and timber harvestation. The northern, western and southern regions bordering to the reclamation site are sparsely forested and primarily agricultural. Land administered by the Helena National Forest is located approximately three miles to the southwest, and also to the east. The Helena Nation Forest Plan (1986) specifies that land use should include scheduled timber management activities, livestock grazing and recreation. Special conditions required by regulatory authorities concerning reclamation activities are presented in Chapter III.10 and Chapter IV.

A. Primary Alternatives Under Analysis

Table 1 summarizes the reclamation alternatives considered.

1. Alternative 1: Approve the proposed Construction Grant

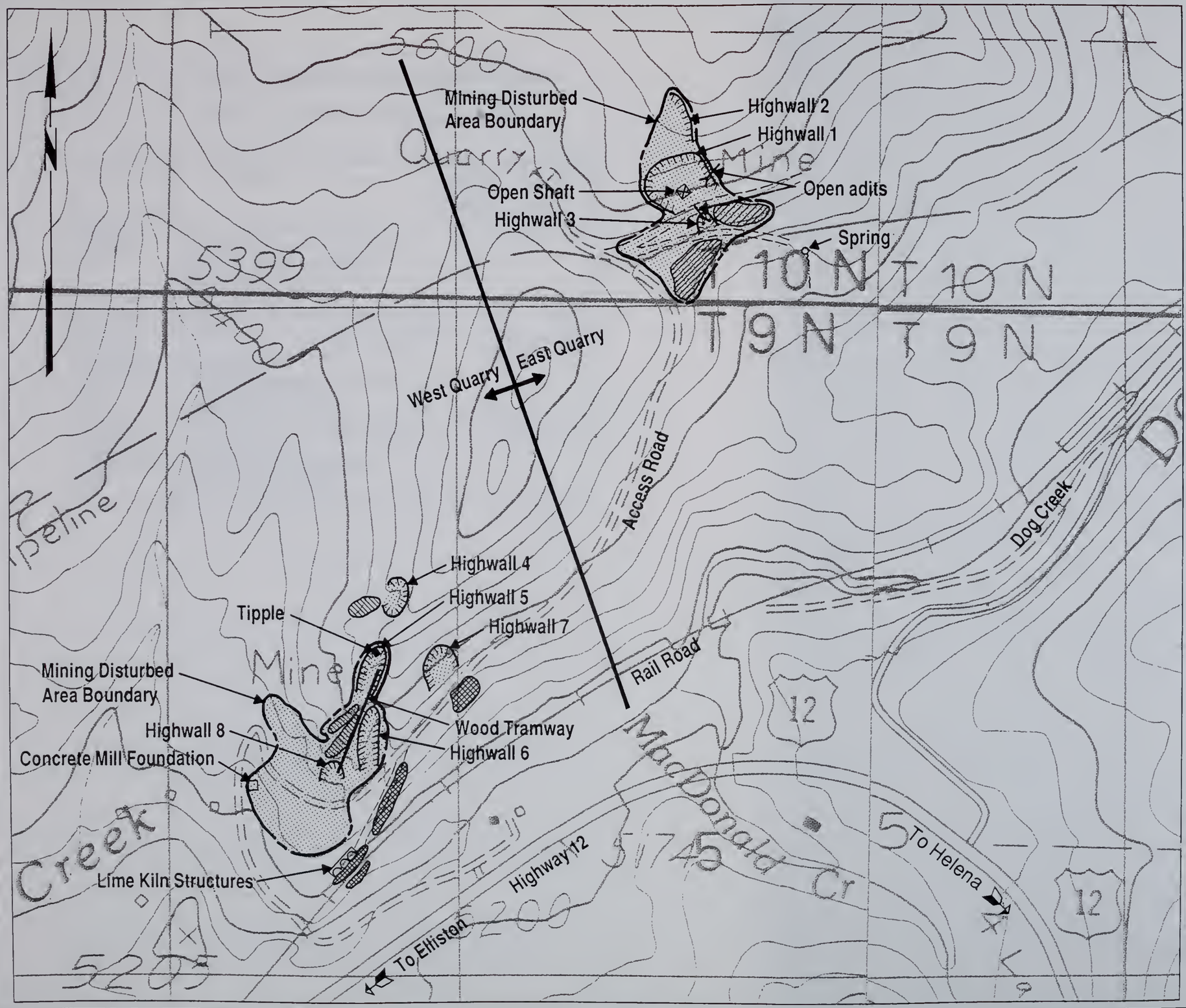
Under this alternative, the OSMRE Field Director would approve a Federal construction grant in the amount of $ 174,800 for use by the AMRB in implementing the following abandoned mine land reclamation proposal:

- install temporary creek crossing
- clean up and dispose of site debris
- close abandoned mine entrances by backfilling with waste rock material
- demolish and dispose of dilapidated mill buildings and related structures
- preserve limestone kiln
- backfill highwall cuts less than 25 feet in height
- construct natural vegetative/fence barrier system around highwall cliffs greater than 25 feet in height
- post warning signs on barrier system perimeter fence
- grade, coversoil and revegetate lime waste piles
- fertilize, seed and mulch remaining devegetated areas
- control weed growth

Gravel surfaced access roads presently exist at both quarry sites. Limited upgrading of these access roads would be necessary to accomplish the reclamation. Also, a temporary creek crossing would be installed to provide site access across Dog Creek.

This alternative would facilitate demolition of the wooden tipple and tramway, along with the three dilapidated buildings at the site. Other debris at the site would be collected and buried, burned, or disposed of off-site. The lime kiln structure would be preserved and fenced instead of being demolished. Hazardous openings would be permanently closed.

Lime waste and waste rock piles on site would be used to backfill depressions and small excavated prospects on the property. Alternatively, excess lime waste may be hauled to nearby abandoned mine sites and used as an acidic soil amendment. Lime waste piles and devegetated areas previously serving as deposition sites for these wastes would be coversoiled and revegetated. Remaining mine-disturbed and devegetated areas would be graded and revegetated without coversoil.



LEGEND

- Lime Waste Pile
- Waste Rock\Gravel Pile
- Highwall
- Adit
- Shaft
- Mining Disturbed Area

Scale 1" = 500' Contour Interval = 20'
From; USGS Elliston & McDonald Pass Quads

Limestone Quarry
Abandoned Mine Reclamation Project

Figure 2 - Site Map

Powell County, Montana

TABLE 1 - SUMMARY OF ALTERNATIVES

POWELL COUNTY LIMESTONE QUARRY

Alternatives	Description of the Alternative	Disturbed Acreage Reclaimed	Requested Grant Amount
Alternative 1: Proposed Action	Clean up site debris; remove unsound structures; grade, coversoil and revegetate devegetated mine spoils; stabilize steep slopes; close mine openings; install vegetation highwall barrier.	19	$174,800.00
Alternative 2: No Action	Leave project area in existing condition: do not reclaim.	0	$0.00
Alternative 3: Modification of the Proposed Action	Same as Proposed Action with the following modifications: - install concrete highwall barrier and omit vegetation highwall barrier - stain highwall faces	19	$204,180.00
Alternative 4: Modification of the Proposed Action	Same as Proposed Action with the following modifications: - omit vegetative highwall barrier system - blast and terrace highwall faces	19	$549,970.00

Highwalls with heights greater than 25 feet would be fenced along tops and sides past the point where hazards exist. Installation of natural vegetative barriers and temporary protected by barbed wire fence would create an effective long-term barrier along highwall cliffs. Additionally, signs would be placed at 100-foot centers on the outer barbed wire fence to warn of highwall hazards.

Highwalls less than 25 feet in height would be backfilled, graded to match existing contours, then coversoiled and revegetated.

The extensive knapweed encroachment would be reduced by weed spraying.

An active overhead power line transacts the west quarry site, and would likely require interim support or temporary relocation to accomplish the work. The construction contractor would arrange this with the utility owner (Montana Power Company). Also, the natural gas line buried in the northwest corner of the project site would be field-located and protected.

The proposed time schedule for Alternative 1 is as follows:

Present:	Finalization of preliminary design. Prepare budget/cost estimates.
Spring 1991:	Bid and award contract for reclamation construction.
Summer 1991:	Initiate construction of proposed project.
Fall, 1991:	Construction completion.
1991 -1992:	Monitor vegetative growth and control weeds.

The contractor would have forty-five days to complete the project. A full-time construction inspector for AMRB would be on-site for the duration of reclamation construction to ensure quality control.

The visual distraction associated with the largest highwalls would not be abated under this alternative. However, other visual distractions (smaller highwalls, site debris, dilapidated structures, and spoil piles) would be eliminated.

2. Alternative 2: Deny the Proposed Construction Grant (No Action)

Under the No Action alternative, the OSMRE Field Office Director would deny a Federal construction grant in the amount of $174,800 for use by the Abandoned Mine Reclamation Bureau in implementing the abandoned mine land reclamation proposal described under Alternative 1. As a result of denying the Federal construction grant, the nineteen acre Powell County Limestone Quarry site would remain in its present condition as described in Chapter I.B.

The No Action alternative would not address existing site problems. Dangerous mine openings, exposed lime waste and waste rock piles, aging mill-related buildings and site debris, and highwalls would continue to pose hazards to the health and safety of humans and livestock. Additionally, disrupted area aesthetics caused by the unsightly highwalls, waste piles and sight debris, would not be abated.

Although the No Action alternative would not necessarily be incompatible with federal land use plans (since surrounding lands are privately owned), land productivity would not be improved. Further, the existence of the quarry would prevent safe recreational use of the area.

B. Other Reasonable Alternatives

3. Alternative 3: Approve the Proposed Construction Grant, as Modified

Under this alternative, the OSMRE Field Office Director would approve a Federal construction grant in the amount of $ 204,180 for use by the AMRB in implementing the abandoned mine land reclamation proposal described under Alternative 1, with the following modifications:

- reduce highwall hazards by installing structural concrete barriers, as opposed to a natural vegetative/fence barrier

- enhance area aesthetics by coloring highwall cuts

Implementation of this alternative would differ from the Proposed Action alternative in highwall reclamation methods and aesthetic enhancement. Instead of installing a vegetative/fence barrier, highwalls of a height greater than 25 feet would be protected by a structural barrier. The barrier system for this alternative would incorporate precast concrete highway dividers (New Jersey guardrail).

To reduce the visual nuisance at the quarry site, highwalls would be stained to blend in with the surrounding rolling hills. Non-toxic stain would be sprayed on highwall cuts. Staining techniques would attempt to color highwalls in a manner that would reduce the visual nuisance they produce. Light-colored limestone cuts would be stained in dark golden, brown, and green hues, imitating area vegetation and shadows. Highwall cut staining has been considered for other reclamation projects in the United States, although it has not been implemented.

This alternative would effectively reduce highwall hazards while reducing the visual nuisance of the highwall cuts. The concrete barrier system, however, would create a visual nuisance itself.

The project schedule, acreage involved, and future land uses would not change from that presented under Alternative 1 (Proposed Action).

4. Alternative 4: Approve the Proposed Construction Grant, as Modified

Under this alternative, the OSMRE Field Office Director would approve a Federal construction grant in the amount of $ 549,970 for use by the AMRB in implementing the abandoned mine land reclamation proposal described under Alternative 1, with the following modifications:

- reduce hazards associated with highwalls greater than 25 feet in height by controlled blasting.

Implementation of this alternative would reduce the safety hazard associated with the highwalls by attempting to eliminate them. Steep highwall cliffs would be blasted to create more gentle slopes. Blasted slopes would be terraced in 10 foot intervals, then coversoiled to promote growth of transplanted vegetation. This alternative would reduce highwall hazards while enhancing area aesthetics.

The project schedule, acreage involved, and future land uses would not change from that presented under Alternative 1 (Proposed Action).

C. Other Alternatives Considered but Eliminated from Detailed Analysis

To address the many possible reclamation alternatives for this project, an Engineering Evaluation/Cost Analysis (EE/CA) matrix has been developed for the individual reclamation problems. The matrix ranks each potential action to a problem by evaluation of the EE/CA criteria.

This evaluation is compiled in Appendix A and includes a description of the EE/CA criteria and potential actions.

Potential actions were eliminated from consideration as part of a reasonable alternative if they received a low ranking compared to the other potential actions for a problem. However, some low ranking potential actions are still included in the other reasonable and preferred alternatives if they become more viable when combined with other potential actions. These potential actions are included in the preferred and other reasonable alternatives discussed earlier in this chapter.

Following is a summary listing of site problems and their potential action eliminated from detailed analysis, including a brief explanation of why the action dismissed.

Problem 1: Unsound mine related structures.

> Structure/building repair (restore) - impractical, not consistent with landowner future use, landowner and state liability associated with a post construction accident, minimal effective longevity and potentially high maintenance costs.

Problem 2: Hazardous mine openings.

> Fencing and signing (restrict entry) - lack of effectiveness, potential health and safety hazard and associated liability not removed, not appropriate technology and inconsistent with future land use.
>
> Constructed closure - This action is unnecessary as the mine openings can be closed more permanently and at less cost with a backfill closure.

Problem 3: Devegetated mine spoils.

> Pond/Flood Disposal and RCRA Liner Disposal - inappropriate technology given site conditions and material type.
>
> Neutralize Spoils - unnecessary given spoils material type and high cost.
>
> Sediment Ponds - inappropriate technology given site conditions (proximity to creek).
>
> Processing or Treatment of Mine Spoils - inappropriate technology given spoils type.

Problem 4: Steep slopes (highwalls).

> Erosion Control Mat, Log Stabilization Structures, Riprap Slopes and Downgradient Settling Ponds - None of these actions are currently incorporated in the potential alternatives but may be incorporated into the final design in a limited basis due to high cost.

CHAPTER III. AFFECTED ENVIRONMENT

A. General Setting

The Powell County Limestone Quarry site is approximately 3 miles west of the Continental Divide, and two miles east of the community of Elliston. The mine lies above the north bank of Dog Creek, one mile east of its confluence with the Little Blackfoot River. The limestone quarry is situated on an open, south-facing grassy slope. Stands of Douglas fir occur in drainage courses, while open slopes are vegetated with native grasses. The project area ranges in elevation between 5,200 and 5,640 feet above mean sea level.

Limestone mining operations took place in two locations in the project area. The eastern mining area consists of a large quarry and access road located at the top of a south-facing ridge. This quarry can be seen from Highway 12 (on the west side of MacDonald Pass) and is the most visually distracting of the two mines.

The western mining area consists of four smaller pits excavated into the sidehill, a tramway, a large wooden tipple, and several processing facility foundations. A limestone kiln structure is located below the quarry area, near the railroad right-of-way.

The southeastern section of the Powell County Limestone Quarry is bordered by the Burlington Northern Railroad, Dog Creek, and Highway 12, respectively. A random waste rock pile is located between the railroad tracks and Dog Creek. The quarry is bordered by private land on all other sides.

B. Critical Elements

1. Cultural, paleontological, or historic resource values

The Montana State Historic Preservation Office (SHPO) has commented that the Powell County Limestone Quarry may have some historic value under Criteria A and C of the Natural Historic Preservation Act. However, those features and characteristics of the site which exhibit significant historic values would be avoided or preserved. The proposed project would not have any impact of significant cultural values at the site.

A small cemetery lies less than one half mile west of the quarry. The historical value of the cemetery is unknown. Reclamation activities at the mine site would not affect the cemetery.

Paleontologic and archaeologic resources of recognized significance are not known to exist in the project area. Extensive ground disturbances have resulted from past mining activities, and reclamation activities would not further the extent of site disturbances. In the event that paleontologic or archaeologic resources are discovered during reclamation activities, construction would be halted to allow SHPO review of the discovery.

2. Water quality/supply values

The Powell County Limestone Quarry is located directly north of Dog Creek. Dog Creek meets the Little Blackfoot River one mile downstream to the west. The confluence of the Little Blackfoot River with the Clark Fork River is approximately 24 nautical miles, also to the west.

Both Dog Creek and the Little Blackfoot River are classified as B-1 streams by the Water Quality Bureau (MDHES). A B-1 stream classification requires that water quality is to be maintained suitable for drinking, culinary and food processing purposes after adequate treatment (Montana Surface Water Quality Standards, 1988).

Surface water quality analyses are summarized in Appendix B. Test results from the spring near the east quarry indicate that surface water quality in the project area has not been degraded by

past quarrying activities. Water quality degradation on site is limited to precipitation contacting exposed waste piles, possibly increasing sediment concentrations and pH (becoming basic).

The quarry site does not appear to directly influence groundwater aquifers in terms of direct recharge. Since all mining at the site was open cut or shallow underground mines, it is likely that past mining activities have not affected area groundwater.

3. Wetland values

Based on section 404 of the Clean Water Act, the spring near the east quarry, and Dog Creek could be classified as water bodies/wetlands under regulation of the U.S Army Corps of Engineers. Riparian flora and fauna are limited to the streambanks of Dog Creek, and are outside of reclamation boundaries.

4. Floodplain/unstable geology concerns

According to Gary Fischer of the Floodplain Management Section (DNRC), floodplains do not exist in the project area (January 1991).

The Powell County Limestone Quarry lies within the Intermountain Seismic belt. Substantial regional seismic activity has been recorded. However, the closest recent activity is related to the Scratchgravel Hills and Prickly Pear fault systems 16 miles to the northeast. The potential of these faults to endanger life or property is considered moderate to major according to an earthquake risk map of the United States (Keller, 1976).

The project area has some steep slopes near the angle of repose for the soil material.

5. Threatened or endangered plant/animal species

The Montana Natural Heritage Program files do not list plant species of particular concern for the project area. Endangered species (or their habitat) are not known to be in or near the project area.

6. Migratory birds of high Federal Interest

The Fish and Wildlife Service, Department of Interior was contacted concerning the presence of migratory birds of high federal interest. Migratory birds of high Federal interest may inhabit or frequent the Powell County Limestone Quarry site or surrounding vicinity, although sightings have not been documented and suitable habitat is lacking (McMaster, January 1991). The nearest known migratory route and suitable habitat for the two known threatened and endangered bird species (the Bald eagle and perigrine falcon) is located more than 30 miles to the northeast.

The Fish and Wildlife Service requested that the Swainson's hawk and its habitat be considered relative to the project area, although the hawk is not listed as threatened or endangered. Habitat suitable for the Swainson's hawk primarily includes prairie streams with stands of cottonwood (Flath, 1991). Sighting of the hawk in the project area and surrounding vicinity have not been documented.

7. Renewable resources/unique farmland values

Neither the proposed project site or the surrounding area are designated as prime or unique farmland as per the Farmland Protection Policy Act (Green, January 1991). The only agricultural use sustained by the land in the project area is livestock grazing. Further, the area cannot be considered prime farmland due to gravely and stony loam soils underlain by Mission Canyon limestone.

The contractor selected to construct the proposed project would determine the source of coversoil borrow material. Suitable coversoil is available commercially in Helena, although the contractor may elect to use agricultural lands as a coversoil source. As a result, the affected environment associated with a coversoil source is undetermined. The contractor would be bound to project specifications requiring compliance with the Farm Protection Policy Act.

8. Recreational resource values

Wild or scenic rivers do not exist in or near the project area. Since the project site and surrounding vicinity is privately owned, the area is not included in a wilderness proposal, or designated as a habitat management area. Areas of scientific, ecological, or recreational importance are also absent from the immediate and surrounding area. The Scapegoat and Gates of the Mountains Wilderness areas are located 34 miles northwest, and 29 miles northeast of the project site, respectively.

A vista point on top of MacDonald pass (3 miles to the east) could be considered an area of visual importance. The Sweeny Creek ecological trail is located 6 miles northeast of the project site. Both the vista and ecological trail will not be affected by reclamation activities at the limestone quarry site. Developed recreational opportunities are available at the MacDonald Pass campground, approximately 3 miles east of the Powell County Limestone Quarry.

The abandoned quarry site invites curiosity seekers, obstructs safe recreational use of the immediate area, and detracts from the visual quality of the surrounding area. The site also discourages the presence of wildlife. Various activities occurring on nearby National Forest land include hiking, hunting, woodcutting, fishing, cross-country skiing, horseback riding and snowmobiling.

Future land uses in the project area will primarily consist of livestock grazing. For adjacent areas, uses may include recreation, livestock grazing and timber harvestation.

9. Social and economic values

The community of Elliston lies 2 miles west of the quarry site, and sustains a number of services as well as residential developments. Private land use in areas surrounding the quarry site generally consist of livestock grazing with some timber cutting.

Since the mine has not been in production since the mid 1960's, economic benefits are not generated by its existence. Reclamation of the mining-disturbed site does not preclude future prospecting by those holding mineral rights.

10. Conformance with Federal, State, regional, and/or local land use plans, programs, and policies

Several Federal, State, regional and local agencies were provided with reclamation plans and maps for the Powell County Limestone Quarry. The agencies were requested to review the proposed actions concerning the project site and surrounding region, and provide specific comments relative to their jurisdictional authority. Agency response letters are presented in Appendix C.

Agency responses concerning land use plans, policies in effect, and special permits likely to be required are discussed at length in Chapter IV.A.

C. Other Affected Resources

11. Soils and mine soils

Shawmut cobbly loam is the primary soils classification in the immediate project area, while the Curecanti-Tolman complex is secondary (Deerlodge SCS, 1990). The Shawmut cobbly loam and Curecanti-Tolman complex occupy the upper 60 inches of the soil formation, and are presumably underlain by Mission Canyon Limestone. Area soils are typically calcareous within 8 inches of the ground surface, and facilitate rapid precipitation runoff.

Project area soils have been disturbed from past mining activities. Mining and milling processes have left random spoil piles of lime waste and waste rock strewn throughout the quarry site. Spoils are devoid of vegetative growth, and as such are exposed to erosion by wind and water. Of particular concern are the lime waste piles, which are alkaline and present an environmental threat to Dog Creek. Appendix B summarizes mine spoils and soils sampled on site.

Since mine spoils originate from limestone formations, heavy metal contaminants are not expected to be present. Contaminants that could originate from limestone include arsenic and selenium. Neither of these elements were found in site mine spoils. Mine spoil analyses reveal a high calcium content (Appendix B).

12. Vegetation

Vegetation commonly supported by the soil formations identified includes the following: rough fescue, bluebunch wheat grass, Idaho fescue, Columbia needlegrass, junegrass and forbes. Element Occurrence Records compiled by the Montana Natural Resource Heritage Program do not identify sensitive plant species in or near the project area.

Past mining activities have left several acres substantially disturbed and unable to revegetate naturally. Devegetated site conditions have allowed the introduction of noxious weed species, primarily spotted knapweed.

13. Fish and wildlife

Dog Creek and the Little Blackfoot River have been evaluated by fishery biologists from the Montana Department of Fish, Wildlife and Parks. Brook trout, cutthroat trout, and mountain whitefish are abundant, while brown trout are common. Both water bodies sustain a moderately valuable fisheries resource.

Wildlife common to the area include: black bear, deer, elk, badger, coyote, grouse, and many small mammals. Although the immediate project site is not suitable wildlife habitat, land surrounding the project provides plentiful habitat.

14. Air quality

No air monitoring has been done in the immediate project area, but air pollution can be assumed to be low and well within ambient air quality standards. This is due to the lack of significant air pollutant sources in the area. Primary emission sources in the surrounding project area include vehicle and train exhaust, and wood smoke from residential dwellings.

The project area is designated as Class II under the Prevention of Significant Deterioration (PSD) classification. The nearest Class I area is the Gates of the Mountains Wilderness approximately 29 miles to the northeast.

The climate of the project area is modified Continental. Long term meteorological data from Canyon Ferry shows mean maximum and minimum temperatures during summer months to be 85 and 50 degrees Fahrenheit, respectively. Mean maximum and minimum winter temperatures are 32 and 10 degrees Fahrenheit. The average annual precipitation for the area is approximately 12 inches. Predominant winds are from the west.

15. Transportation

The transportation system available to access the Powell County Limestone Quarry include Highway 12, a site access road, and the Burlington Northern Railroad. Traffic on Highway 12 is moderately heavy, as it is the primary route between Helena and Missoula. An active east-west Burlington Northern railroad route borders the project area to the southeast.

CHAPTER IV. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

It was determined in Chapter III that the following critical elements would be omitted from the analysis of environmental consequences of the alternatives: Cultural, paleontological, or historic resource values; Wetland values; Floodplain/unstable geology concerns; Threatened or endangered plant/animal species; Migratory birds of higher Federal interest.

While direct and indirect impacts are discussed for each alternative in the following section, cumulative impacts are presented in Section C. of this chapter.

A. Critical Elements

1. Water quality/supply values

Project descriptions and site maps were submitted to the following agencies for review and comment:

- Water Quality Bureau, Department of Health and Environmental Sciences
- Fisheries Division, Department of Fish, Wildlife and Parks

The Water Quality Bureau (MDHES) directed that a 3A Authorization (Short-term Exemption from State Surface Water Quality Turbidity Standards) for the proposed reclamation activities would be required. Long term losses or reductions in productivity associated with the action alternatives are not expected.

A written directive was issued by the Stream Protection Coordinator for the Department of Fish, Wildlife and Parks indicating that the Stream Protection Act would apply to construction activities on the project site (Crest, January 1991). A 124 permit would be necessary for all reclamation alternatives to comply with this act.

IMPACTS COMMON TO ALTERNATIVES 1 AND 3:

It was determined in Chapter III.B.1 that degraded surface waters within and downstream of the project area has not been documented. However, a pollution source does exist at the project site.

Under Alternatives 1 and 3, exposed lime waste would either be used as backfill material, or employed as a soil amendment at abandoned mine land reclamation project sites where acidic soils require neutralization. Waste rock would likewise be useful as backfill material due to its inert nature. Materials used as backfill would be properly coversoiled and revegetated, reducing environmental threats associated with the erosion of lime waste and waste rock.

Implementation of these alternatives would require the use of heavy construction equipment, resulting in temporary but potential impacts to water quality. Heavy construction activities, by nature, tend to increase soil erosion potentials during the construction period. Implementation of the proposed project would take place during summer and early fall months. Although summer months are typically dry, thunderstorm events can occur. Summer thunderstorm events are typically short in duration yet relatively high in precipitation. In addition to obtaining necessary permits, silt fences and sediment barriers would be strategically located to minimize sedimentation to Dog Creek.

ALTERNATIVE 2:

Under the No Action alternative, surface water quality within the immediate project site would remain in its present condition. Sources of potential water pollution (mine spoils) would not be reclaimed, and would continue to threaten local water quality.

ALTERNATIVE 4:

Water quality impacts associated with this alternative would be similar to those identified in the Proposed Action. However, highwall blasting would temporarily increase erosion potentials during the construction period, as well as alter the natural spring near the West Quarry. Blasting would cause massive ground disruption, leaving approximately 2 acres of surface area exposed to erosion sources until grading and revegetation was completed. Installation of silt fences and hay bale dikes would reduce potential sediment loads to Dog Creek, although the potential impact to water quality is greater for Alternative 4 than it would be for Alternatives 1 and 3.

2. Renewable resources/unique farmland values

IMPACTS COMMON TO ALTERNATIVES 1, 3, AND 4:

The source of coversoil material for reclamation activities would be determined by the construction contractor. Suitable coversoil is commercially available, although the contractor may elect a non-commercial source. The contractor would be required to comply with the Farm Protection Policy Act and other applicable laws. Since the source of coversoil is undetermined, impacts to this resource cannot be determined at this time. Impacts would be minimal through compliance with governing regulations.

ALTERNATIVE 2:

The No Action alternative would not affect renewable resources or unique farmland values.

3. Recreational resource values

Project descriptions and site maps were submitted to the following agencies for review and comment:

- Helena National Forest
- Powell County Planner

Based upon the preliminary reclamation project description for the Powell County Limestone Quarry, the forest plan pertaining to nearby Forest Service lands will not be affected (Turner, 1991). However, project approval by the Helena National Forest Service will be based upon final project design.

Attempts to contact the Powell County planner were unsuccessful. The most recent county wide plan was adopted in 1978. Review of the plan determined that reclamation activities would be in conformance with county wide goals.

IMPACTS COMMON TO ALTERNATIVES 1, 3, AND 4:

The existing hazards to public safety (dangerous mine openings, extreme highwalls, and aging mill-related buildings) would all be reduced or removed under the action alternatives. The alternatives would facilitate the proper backfill and closure of mine openings, demolition and disposal of unsound site structures, and reduction of hazards associated with the highwalls. The reclamation plan would also include disposal of unsightly waste piles, as well as grading and revegetation of

disturbed areas. Proposed project actions which would reduce safety hazards and enhance vegetative cover of the project site would also indirectly increase the recreational resource potential of the project area.

Alternatives 1, 3 and 4 would require a short duration of construction activity between May and October of 1991. Site access would be temporarily restricted to the public for safety purposes during the period of construction.

ALTERNATIVE 2:

The No Action alternative would result in unchanged recreational resource values. Current site conditions obstruct safe recreational use of the immediate project site, and detract from the aesthetic value of the surrounding undisturbed area.

IMPACTS UNIQUE TO ALTERNATIVES 3 AND 4:

In addition to benefitting recreational resource values identified above, Alternatives 3 and 4 would include an additional benefit. Disturbed aesthetics resulting from the highwall cuts (greater that 25 feet in height) would be enhanced by staining under Alternative 3, and removing the highwalls by blasting under Alternative 4. Highwall cuts less than 25 feet in height would be backfilled, coversoiled, and revegetated. These alternatives would reduce the visual nuisance presently associated with the highwalls, and therefore enhance area aesthetics. Improved aesthetics would indirectly increase recreation potentials in the vicinity.

4. Social and economic values

IMPACTS COMMON TO ALTERNATIVES 1, 3, AND 4:

These alternatives are expected to cost between $174,800 and $ 549,970 to implement. Dollars associated with construction of the alternatives would be spent on labor, materials, and project management. Construction of the alternatives would create jobs for individuals employed in the construction trade. Local businesses supplying materials or services for the project may also economically benefit.

Since the Powell County Limestone Quarry has not been in operation since the mid 1960's, loss of employment and mine revenues would not occur from implementing the alternatives. Reclamation would not preclude future mining opportunities on the project site.

ALTERNATIVE 2: NO ACTION

Under the No Action alternative, social and economic values would remain as described in Chapter III.B.9.

IMPACTS UNIQUE TO ALTERNATIVE 4:

Alternative 4 is economically unique. Cost associated with blasting highwalls increases the overall project cost by approximately $ 375,170 to $ 549,970. The additional cost is prohibitive when considering the incremental benefit, relative to the proposed alternative, is nominal.

5. Conformance with Federal, State, regional and/or local land use plans, programs and policies

Several Federal, State, regional and local agencies were provided with reclamation plans and maps for the Powell County Limestone Quarry mine site. All of the agencies were requested to review

the proposed actions in relation to the project site and surrounding region, and provide specific comments relative to their jurisdictional authority. Agency response letters are presented in Appendix C. Below, agency responses are summarized according to land use plans, policies in effect, and specific permits which would likely be required.

Land Use Plans: Future land uses in the immediate project area may include recreation and livestock grazing. For the area surrounding the project, uses may include recreation, livestock grazing and timber harvestation. The northern, western and southern regions adjacent to the reclamation site are sparsely forested and primarily agricultural. Land administered by the Helena National Forest is approximately three miles to the southwest, and also to the east. The Helena Nation Forest Plan (1986) specifies that land use should include scheduled timber management activities, livestock grazing and recreation.

Policies Affecting the Project Area: The construction contractor will be required to comply with all applicable Occupational Safety and Health Administration (OSHA) requirements, and federal, state, and local laws. A weed management plan would be approved prior to initiating construction activities.

Permits Likely to be Required: Burning permit, 3A authorization, 124 permit, 404 permit, applicable blasting permits (Alternative 4).

IMPACTS COMMON TO ALTERNATIVES 1, 3, AND 4:

Applicable and/or Relevant and Appropriate Requirements necessary for the implementation of the proposed action are summarized above, while agency directives are presented in Appendix C.

ALTERNATIVE 2: NO ACTION

Conformance with federal, state, regional and/or local land use plan, programs and policies would not be necessary under the No Action alternative.

B. Other Affected Resources

6. Soils and mine soils

IMPACTS COMMON TO ALTERNATIVE 1 AND 3:

Existing site soil conditions were depicted in Chapter III.C.3 as being disturbed from previous mining activities. Alternatives 1 and 3 would require the following reclamation activity:

- lime waste and waste rock piles would be backfilled into highwall cuts less than 25 feet in height, coversoiled and revegetated.

- disturbed areas lacking vegetation would be graded, coversoiled and revegetated.

Organic-rich coversoil would be used in portions of the project area to promote revegetation potentials. This action would benefit the existing condition of the exposed site soils, and indirectly benefit vegetation, livestock and wildlife habitat.

IMPACTS UNIQUE TO ALTERNATIVE 2:

Under the No Action alternative, soil conditions would remain unchanged from those present. Site soil conditions on the immediate project site are degraded from mine waste piles other related mining disturbances.

IMPACTS UNIQUE TO ALTERNATIVE 4:

Under Alternative 4, highwall hazards greater than 25 feet in height would be reduced by blasting, grading and revegetating. Blasting the highwalls would result in massive soil disturbances, not only in the highwall vicinities, but possibly in locations outside of the project area. Intense ground movements associated with blasting could result in shifting ground and disturbed surface soils. Off-site ground disturbances may potentially affect structures including utilities, fences, rail line, residential units, and out buildings, or the natural spring. Of particular concern are the natural gas line, railroad tracks, and power transmission line. These installations are vulnerable to ground movements.

Once the highwalls have been blasted and graded, organic-rich coversoil would be applied to promote revegetation potentials over barren soils. This action would positively benefit the existing condition of the exposed site soils, and indirectly benefit vegetation, and possibly wildlife habitat.

7. Vegetation

IMPACTS COMMON TO ALTERNATIVES 1, AND 3:

As a result of the improved site soil conditions, vegetative growth and diversity potentials would significantly improve from existing devegetated conditions. Enhancing site vegetation would promote soil stability, and reduce erosion and the likelihood of noxious weed intrusion. Further, it would indirectly improve wildlife habitat and aesthetic conditions.

ALTERNATIVE 2: NO ACTION

The No Action alternative would allow site vegetation conditions to remain in the present condition as depicted in Chapter III.C.12.

ALTERNATIVE 4:

Although area soils may be disturbed from blasting, mining-disturbed soil conditions would be expected to improve, indirectly enhancing site vegetative conditions.

8. Fish and wildlife

IMPACTS COMMON TO ALTERNATIVES 1, 3, AND 4:

Implementing these alternatives would result in minor increased benefits to wildlife on and around the project site in terms of vegetation enhancement. Indirectly, the project site would be more desirable to wildlife as a result implementation of the alternatives, as the overall habitat would improve. Further, reclaiming waste piles would reduce pollution sources to Dog Creek and the Little Blackfoot River, perhaps enhancing local fisheries.

Construction activities associated with the alternatives may temporarily discourage the use of the immediate project site by wildlife and increase sediment concentrations to surface waters. However, overall impacts as a result of the alternatives would be positive.

IMPACTS UNIQUE TO ALTERNATIVE 2:

Under this alternative the quantity and diversity of fish and wildlife species in and around the project area would likely remain unchanged.

IMPACTS UNIQUE TO ALTERNATIVE 4:

Implementing Alternative 4 may temporarily disturb wildlife frequenting or inhabiting the area surrounding the quarry as a result of highwall blasting. Annoyances associated with short but intense noise incidences and ground movement would likely disturb wildlife in the proximity affected by blasting. These disturbances would be short in duration and temporary in nature. Disturbances to burrowing animals may be more profound.

9. Air quality

Contact was made with the Air Quality Bureau concerning possible reclamation activities at the project site. An air quality permit is not required for any of the proposed action alternatives as potential emissions are expected to be well below 25 tons per year (Driscoll, January 1991).

IMPACTS COMMON TO ALTERNATIVES 1, AND 3:

Construction activities required to implement the above alternatives would likely increase fugitive dust particle concentrations and vehicle exhaust in the project area. Increased levels of fugitive dust and vehicle emissions would exist for the duration of construction activities only, and would be localized to the project site. Applying water to haul roads would effectively reduce fugitive dust emission. If the construction contractor elects to burn site debris, he would be bound by contract specifications to obtain all necessary burning permits.

IMPACTS UNIQUE TO ALTERNATIVE 2:

Air quality conditions would remain unchanged from current conditions in and around the project area.

IMPACTS UNIQUE TO ALTERNATIVE 4:

Since Alternative 4 would require extensive blasting and site earthwork, fugitive dust emission would be greater than that associated with Alternatives 1 and 3. However, the emission would only exist for the duration of reclamation activities.

10. Transportation

IMPACTS COMMON TO ALTERNATIVES 1, 3, AND 4:

Since construction of the reclamation project in the above alternatives would require employees to travel to and from the project site, traffic in the project area would slightly increase relative to current conditions. This increase, however, would be temporary and minor in its overall impact on current traffic levels.

IMPACTS UNIQUE TO ALTERNATIVE 2:

Traffic conditions would remain unchanged from those existing in the project area (Highway 12 and the quarry access road).

C. Cumulative Impacts

ALTERNATIVE 1: PROPOSED ACTION

As identified in this and previous chapters, implementation of the Proposed Action alternative would directly benefit the following individual elements on the immediate project site:

- health and safety
- vegetation
- soil condition and stability

Collectively, the above elements would indirectly benefit the following elements:

- recreational resource values
- wildlife habitat
- site aesthetics

ALTERNATIVE 2: NO ACTION

The No Action alternative would allow existing site conditions to cumulatively negatively affect human health and safety, recreation resource potentials, vegetative conditions and area aesthetics.

ALTERNATIVE 3:

Implementing Alternative 3 would have cumulative impacts similar to the Proposed Action, although it would present a tradeoff in terms of aesthetics. Highwall staining would enhance area aesthetics, while the highwall protective barrier would detract from site aesthetics.

ALTERNATIVE 4:

Alternative 4 would have cumulative impacts similar to the Proposed Action alternative. However, blasting may negatively affect area utilities and structures.

D. Mitigation Measures

MITIGATION MEASURES COMMON TO ALTERNATIVES 1, 3 AND 4:

Mitigation measures must be taken to decrease the impacts associated with temporary construction activities.

In order to reduce short term (less than three months) negative impacts likely to result from construction activities, the following mitigation measure should be taken during construction activities:

1. Apply water to haul roads and graded areas regularly to reduce emission of fugitive dust.
2. Utilize erosion control devices, such as erosion fences, and energy dissipators to reduce erosion potentials.
3. Require "Weed Free Seed" certification for seed utilized in the revegetation process.
4. Require construction contractor to observe speed limits on access roads.
5. Periodically spray the project site to reduce the spread of knapweed resulting from construction activities.

MITIGATION MEASURES UNIQUE TO ALTERNATIVE 4:

Since Alternative 4 would require blasting, extra precautions would be necessary to protect residents, pedestrians, motorists and livestock.

1. Implement proper warning signal prior to blasting.
2. Clear the immediate area of livestock.
3. Provide traffic control to prevent flying debris from striking passing motorists.
4. Comply with OSHA regulations concerning blasting.

ALTERNATIVE 2: NO ACTION

Mitigation measures do not apply to the No Action alternative.

E. Unavoidable Adverse Impacts

The construction contractor may obtain coversoil from a non-commercial source. Adverse unavoidable impacts to the coversoil borrow site would include decreased soil thickness, and temporary disturbances resulting from construction activities. Upon completion of borrow material excavation, the contractor would be required to reclaim the borrow site. Reclamation would include grading, replacement of topsoil, and revegetation. Adverse impacts to the borrow site would be temporary, existing until site vegetation was reestablished. Impacts to the borrow site would occur for all three reclamation alternatives.

IMPACTS COMMON TO ALTERNATIVES 1 AND 3:

Negative impacts resulting from implementing the reclamation alternatives may include increased fugitive dust emission and temporary restriction of a recreational resource. All of the above-listed unavoidable adverse impacts would be temporary in duration (less than three months), strictly associated with construction activities.

ALTERNATIVE 2: NO ACTION

Unavoidable adverse impacts do not apply to the No Action alternative.

IMPACTS UNIQUE TO ALTERNATIVE 4:

Alternative 4 would increase noise pollution, fugitive dust and diesel fuel emissions far greater that Alternatives 1 and 3. The increases are associated with blasting highwalls, and are temporary in duration (less than three months).

Additionally, blasting may affect the physical integrity of nearby structures and utilities. Several residential structures, a natural spring, a natural gas pipeline, Highway 12, a railroad, and a power line are located near the project area, and would be at risk. Ground movements and flying debris are of primary concern to these building during blasting operations.

F. Short-term Uses vs Long-term Productivity

All action alternatives (1, 3, and 4) would require a short-term construction impact (less than three months). Short-term construction impacts would include increased noise pollution, fugitive dust emission, and traffic levels for an approximate duration of less than three months. Construction activities would temporarily restrict recreational usage of the immediate project site. However, implementation of construction activities for the action alternatives would significantly enhance overall long-term productivity of the project site, and possibly the surrounding vicinity. Long-term productivity of the site would be enhanced to varying degrees by implementation of action alternatives, and would positively benefit the following individual elements on the immediate project site:

- health and safety
- vegetation
- soil condition and stability

Collectively, these elements would be expected to positively impact the following resources:

- recreational resource values
- wildlife habitat
- site aesthetics

Further, water quality degradation potentials resulting from lime waste and waste rock piles would be eliminated.

Alternative 1 would be superior to the other alternatives. The vegetative barrier would provide increased wildlife habitat, particularly to birds and small mammals.

Alternative 4 would be superior to the other alternatives in long-term land productivity. Eliminating highwalls would increase the amount of productive land. However, detrimental affects associated with short-term uses (blasting) may outweigh the long-term land productivity.

Clearly, short-term usage (construction activities) would positively benefit the project site in terms of long-term productivity.

G. Irreversible and Irretrievable Commitments of Resources

COMMITMENTS COMMON TO ALTERNATIVES 1, 3, AND 4:

An irretrievable commitment of resources as a result of implementing these reclamation actions may be considered the removal of coversoil from an undetermined location to use in the reclamation process.

Energy necessary to facilitate construction is identified as a finite, irreversible commitment of petroleum products and electrical power.

Implementing the alternatives would not preclude future mining opportunities at the mine site, therefore reclamation of the project site would not constitute an irreversible commitment of limestone resources.

ALTERNATIVE 2: NO ACTION

Irreversible and irretrievable commitments of resources does not apply to the No Action alternative.

CHAPTER V. CONSULTATION & COORDINATION

A. Persons, Organizations, and Agencies Contacted

Margaret Beer, Data Manager. Natural Resource Information System, Montana State Library, Helena, Montana.

Ken Crest, Stream Protection Coordinator, Department of Fish, Wildlife and Parks, Helena, Montana.

Pat Driscoll, Environmental Engineer, Air Quality Bureau, Department of Health and Environmental Sciences, Helena, Montana.

Gary Fischer, Manager. Engineering Bureau, Department of Natural Resources and Conservation, Helena, Montana.

Glen Green, District Conservationist. Soil Conservation Service, United States Department of Agriculture, Deer Lodge, Montana.

Denis Hart, District Ranger. Helena Ranger District, United States Department of Agriculture, Helena, Montana.

Katherine Huppe, Historical Survey Reviewer. Montana Historical Society, Helena, Montana

Larry Laing, Soil Scientist. US Forest Service, Helena National Forest, Helena, Montana.

Bob McInerney, U.S. Army Corps of Engineers, Helena, Montana.

Larry Pederman, Fisheries Biologist. Montana Fish, Wildlife and Parks, Helena, Montana.

Fred Shewman, Permits Section Manager. Water Quality Bureau, Department of Health and Environmental Sciences, Helena, Montana

John Wardell, Montana Director. Region VIII, U.S. Environmental Protection Agency, Helena, Montana.

Jack Thomas, Environmental Specialist. Department of Health and Environmental Sciences, Water Quality Bureau, Helena, Montana.

B. Preparers and Reviewers

Susan McAnally, Reclamation Specialist, Abandoned Mine Reclamation Bureau, Department of State Lands

Robert B. Morton, Reclamation Scientist, Robert Peccia and Associates

Susie M. Smith, Environmental Engineer, Robert Peccia and Associates

CHAPTER VI. REFERENCES

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CHAPTER VII. APPENDICES

APPENDIX A.

ENGINEERING EVALUATION/COST ESTIMATE

ENGINEERING EVALUATION/COST ANALYSIS

Site(s): Limestone Quarry

Problem: Steep Devegetated Slopes (including highwalls and subsidence)

Potential Action	Technical Feasibility	Effectiveness	Health & Safety Impact	Environmental Impact	Implementability	Cost	Appropriate Technology	Consistent with Future Use	Legally Permissible	Liability	Construction Time	Longevity/ Maintenance		Total Ranking
No Action	+	●	+	+	●	+	●	●	o	●	●	+		-3
Regrade to Stabilize	+	+	+	+	o	o	+	+	+	o	o	o		+7
Fill to Stabilize	+	●	+	+	●	◇	●	o	●	o	o	◇		+7
Terracing	o	+	+	+	o	o	+	+	+	o	o	o		+6
Revegetate	+	●	+	+	●	+	●	●	●	●	●	+		+12
Remove Spoils	◇	●	+	◇	o	+	o	●	o	o	●	+		+7
Erosion Mat Control	o	o	o	+	+	o	o	o	+	+	o	●		+5
Log Stabilization Structures	o	o	●	+	+	o	o	o	+	+	o	+		+5
Stain Slope Face	+	o	◇	◇	o	+	o	o	o	o	o	◇		0
Riprap Slope	●	+	◇	+	●	o	◇	+	+	●	o	●		+8
Down Gradient Settling Ponds	+	o	+	+	o	o	o	+	+	+	◇	o		+5
Transplant to Revegetate	●	+	+	+	●	o	+	+	+	+	o	+		+10
Coversoil	+	●	+	+	o	◇	o	●	●	●	o	◇		+7
Fence & Sign	●	o	◇	◇	●	+	o	o	o	o	●	◇		●
Blasting to Stabilize	+	+	o	o	o	-	+	+	o	+	●	+		+4

Ranking Legend:
+ Desirable
o Acceptable
- Undesirable

ENGINEERING EVALUATION/COST ANALYSIS

Site(s): Limestone Quarry

Preblem: Hazardous Mine Openings

Potential Action	Technical Feasibility	Effectiveness	Health & Safety Impact	Environmental Impact	Implementability	Cost	Appropriate Technology	Consistent with Future Use	Legally Permissible	Liability	Construction Time	Longevity/ Maintenance		Total Ranking
No Action	+	+	-	-	+	+	+	+	+	-	+	+		-2
Fence & Sign	+	-	●	o	+	+	+	-	◇	o	+	o		0
Backfill Closure	+	+	-	-	+	+	+	+	+	-	+	+		+12
Constructed Closure	+	o	o	o	+	o	+	o	+	o	+	o		+5

Ranking Legend:
+ Desirable
o Acceptable
- Undesirable

ENGINEERING EVALUATION/COST ANALYSIS

Site(s): Limestone Quarry

Problem: Devegetated Mine Spoils

Potential Action	Technical Feasibility	Effectiveness	Health & Safety Impact	Environmental Impact	Implementability	Cost	Appropriate Technology	Consistent with Future Use	Legally Permissible	Liability	Construction Time	Longevity/ Maintenance		Total Ranking
No Action	+	+	-	●	+	+	+	+	◇	o	+	●		-2
Haul Off-Site for Use	-	+	o	+	o	-	+	+	+	◇	o	o		+5
On Site Disposal	+	+	◇	o	+	+	+	+	+	o	◇	o		+7
Inplace Disposal	+	+	◇	o	+	+	◇	+	+	o	◇	o		+6
Pond/Flood Disposal	-	+	o	o	-	-	-	+	o	o	-	o		-5
Centralized Disposal	o	+	o	o	o	o	o	o	o	o	o	o		+3
RCRA Liner Disposal	o	+	+	o	o	-	-	o	+	+	o	+		+3
Backfill in Mine	+	+	-	●	+	◇	+	+	◇	o	◇	o		+7
Neutralize Spoils	+	+	◇	●	+	+	◇	+	◇	o	◇	o		+7
Grade	+	◇	◇	o	+	+	+	+	+	o	+	o		+7
Coversoil	+	+	◇	-	◇	◇	+	+	+	+	◇	+		+8
Seed, Fertilize, & Mulch	+	+	o	+	+	-	+	+	+	+	+	+		+11
Fence & Sign	+	+	-	-	+	+	+	+	+	+	+	◇		+7
Sediment Ponds	+	◇	◇	o	o	◇	◇	+	◇	o	+	●		+7
Process/Treatment	+	-	◇	-	-	-	+	+	◇	◇	+	+		-3

Ranking Legend:
+ Desirable
o Acceptable
- Undesirable

ENGINEERING EVALUATION/COST ANALYSIS

Site(s): Limestone Quarry

Problem: Mine Related Structures

Potential Action	Technical Feasibility	Effectiveness	Health & Safety Impact	Environmental Impact	Implementability	Cost	Appropriate Technology	Consistent with Future Use	Legally Permissible	Liability	Construction Time	Longevity/ Maintenance		Total Ranking
No Action	+	-	-	-	+	●	o	●	●	-	●	-		-1
Demolish & Remove	+	+	+	+	+	o	+	+	+	+	◇	+		+10
Repair	o	-	-	-	+	o	o	●	●	-	o	-		-2
Fence & Sign	+	-	-	o	+	●	●	o	o	-	o	o		0

Ranking Legend:
+ Desirable
o Acceptable
- Undesirable

APPENDIX B.

WATER QUALITY AND SOIL ANALYSES

LIME QUARRY MINE
Water Analysis

Parameter (mg/l)	Drinking Water Std.	Lime Quarry Spring 11-28-90
pH (s.u.)		7.200
Spec Cond @ 25 C, umhos/cm		374.000
Sulfate	250.000#	16.000
METALS:		
Cadmium	0.010*	<0.001
Calcium		74.000
Copper	1.000#	<0.010
Iron	0.300#	0.920
Magnesium		8.000
Manganese	0.050#	<0.020
Selenium	0.010*	<0.005
Zinc	5.000#	0.110

* Primary Drinking Water Standards
# Secondary Drinking Water Standards
@ Health Advisory

ELLISTON LIMESTONE MINE
Soil Analysis

Parameter	Lower Site #1 27286 9-28-90	Lower Site #2 27287 9-28-90	Lower Site #3 27288 9-28-90	Upper Site #1 27289 9-28-90	Upper Sit #2 27290 9-28-90	Upper Site #3 27291 9-28-90
pH (s.u.)	12.60	12.60	12.60	11.70	10.20	9.90
HCL DIGESTION PROCESS						
TOTAL METALS						
Aluminum (ug/g)	830.00	1200.00	3700.00	66.00	65.00	440.00
Calcium as CaCO3 % wt	112.50	101.50	76.30	93.50	93.30	89.60
Iron (ug/g)	520.00	1600.00	2100.00	180.00	180.00	820.00
Manganese (ug/g)	35.00	45.00	47.00	21.00	30.00	44.00
Magnesium as MgCO3 % wt	1.80	1.50	9.20	1.40	1.20	1.40
EPA METHOD 3050						
TOTAL METALS, ug/g:						
Arsenic	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Selenium	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00

(1) Tons/1000 Tons
(2) H2O Extract
(3) Saturated Paste Extract

APPENDIX C.

AGENCY RESPONSE LETTERS

State Historic Preservation Office
Montana Historical Society
Mailing Address: 225 North Roberts • Helena, MT 59620-9990
Office Address: 102 Broadway • Helena, MT • (406) 444-7715

August 22, 1990

Dale Herbort, Reclamation Specialist
Abandoned Mine Reclamation Bureau
Reclamation Division
Montana Department of State Lands
1625 Eleventh Avenue
Helena, MT 59620

Re: Review of Golden Messenger and Elliston Limestone Mines

Dear Dale:

Thank you for requesting our review and evaluation of the two mines referenced above. In the case of the Golden Messenger Mine (24LC872), we concur with HRA's recommendation that the mine retains too little integrity to qualify for listing. The marginal importance of that particular area in even local terms supports a finding of ineligibility as well.

The Elliston Limestone Mine (24PW446) appears to qualify for listing under Criterion A as the largest and longest lime mining and processing operation in the state. Lime manufacturing was an industry first closely tied with settlement and mining, providing necessary materials for the construction of substantial housing, commercial and government buildings as well as for the processing of ores. While most of the small but active lime industry in the area failed as demand for lime in building and mining declined in the first decades of the 1900s, the Elliston facility was able to exploit its position along major rail and later highway transportation corridors to remain competitive into the '60s. It was also able to adapt to the changing demands for its product.

The property also appears eligible under Criterion C for its relatively complete representation of the necessary components of limestone mining, reduction and transportation. There has apparently been very little intrusion in the area that was not directly related to the industry. Quarries, transportation routes, kilns and waste piles remain in recognizable and interpretable relationships with one another and with the mining landscape. There is even an intact domestic component present at the site.

The only question really remaining, Dale, is one of dating. The consultant believed at the time the original report was done that inability to historically associate various components of the operation with a single period of development compromised its integrity. They further believed the kilns remaining at the site were not original but were built sometime before 1949. From our perspective, it is not essential, given a long term operation like this mine, for the remaining components to all date to the same period of significance. Indeed, having them otherwise can often nicely illustrate the growth of the industry and changing industrial methods. Suspected replacement

of the kilns is not securely dated. Under the circumstances, unless it can be clearly shown that the kilns were replaced too recently to be considered of historic age, we would consider the mine eligible for listing. We would, of course, like to know what your agency's position on eligibility is.

There remain some fine points which we should discuss even if the kilns are shown to be too young to be considered historic. If they were built in the same place as the original kilns, and of similar materials, there is some possibility the property could still be considered eligible. There is some indication from the site plan that there may have been kilns in that particular location from the time the railroad was built, even if there were contemporary or earlier kilns located elsewhere at the site. HRA's reference to the use of gas might indicate a renovation and conversion of existing kilns as newer methods of firing the limestone became profitable, too. If that were the case, for example, the kilns at Elliston would represent the only gas-fired kilns we know from the area. In comparison with earlier operations known from Lewis and Clark and Jefferson Counties, the kilns might be considered eligible as part of a lime kiln district, or gain additional (perhaps even exceptional) significance under Criterion C.

In summary, Dale, although we don't yet have all the information we really need to do a formal determination of eligibility for the Elliston property, we strongly suspect it is eligible. We would be happy to discuss potential sources of final dating for the kilns with you. Alternatively, we would be comfortable with doing a consensus determination of eligibility with your agency with the information currently available if that is a preferred course of action from your perspective.

There appears to be a problem with the Smithsonian number HRA lists for the Elliston site. Would you please check to see if it is just a typo? Our microfilm site forms show that number assigned to the Bill Hurt Cabin.

Thank you for consulting with us, and please call if you want to discuss these properties.

Sincerely,

Katherine M. Huppe
Historical Survey Reviewer

File: Comp/DSL-AMR Hardrock/1990

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

REPLY TO
ATTENTION OF

January 31, 1991

U.S. Army Corps of Engineers
c/o DNRC/CDD
1520 East 6th Avenue
Helena, MT 59620-2301
(406)444-6670

Robert Morton, Reclamation Scientist
Robert Peccia and Associates
P.O. Box 5653
Helena, MT 59601

Dear Bob:

I apologize for being late with these comments. (Susan's letter was buried under some other papers.)

Under the authority of Section 404 of the Clean Water Act, Department of the Army permits are required for the placement of dredged or fill material below the ordinary high water mark of our nation's rivers, streams, lakes or in wetlands. Some of your proposed activities for stream reclamation such as bank stabilization, channel restoration and diversions may require 404 authorization.

Enclosed is a new brochure concerning the Corps regulatory program and also a copy of the Regional General Permit 89-03 for fish habitat structures, which we discussed on the telephone.

Sincerely,

Bob McInerney

Robert E. McInerney
Montana Field Office
Regulatory Branch
Operations Division

Enclosure

cc: Susan McAnally

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

STAN STEPHENS, GOVERNOR

LEE METCALF BUILDING
1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721

HELENA, MONTANA 59620-2301

RECEIVED
JAN 14 1991
ROBERT PECCIA
& ASSOCIATES

January 10, 1991

Mr. Robert Morton, Reclamation Scientist
Robert Peccia and Associates
P.O. Box 5653
Helena, MT 59601

Re: Environmental Assessments (EAs) for Abandoned Mine Reclamation Sites in Powell, Jefferson, and Lewis and Clark Counties

Dear Mr. Morton:

This is in response to Ms. Susan McAnally's letter of January 7, 1991 regarding regulatory input for the above-referenced EAs.

There are no designated floodplains for the waterways affected by the following sites:

1. Powell County Limestone Quarry
   SW¼ Sec.32, T10N, R6W and NW¼ Sec.5, T9N, R6W

2. Nellie Grant Mine
   Secs. 14 & 15, T8N, R5W

3. Upper Blackfoot Mine
   Secs. 20,21,27,28,29, T15N, R6W and Sec.24, T15N, R7W

4. York Mining District
   Secs. 4,5,6,9,10,11,13,14,15,16, T11N, R1W

Susan had indicated in her letter to me that mine related spoils will likely be removed from the floodplain in the Upper Blackfoot project area. Upon closer investigation, the limits of the detailed study area which delineates floodplain areas on the upper Blackfoot River end downstream of where the project site is located. Therefore no designated floodplains exist at the Upper Blackfoot project area.

As such, the Floodplain Management Section of the Department of Natural Resources and Conservation does not have authority to regulate activities for the above project sites. Other permits

will likely be required and I am enclosing a pamphlet entitled "A Guide to Stream Permitting in Montana" which outlines required permits and the appropriate contact agencies. If you do not already have this publication, it may help in your EA development.

Also, I have replaced John Hamill as the Floodplain Management Supervisor at the DNRC. Please note this for any future correspondence.

If you have any questions or comments, please call me at 444-6646.

Sincerely,

Gary R. Fischer

Gary R. Fischer, P.E.
Floodplain Management Supervisor
Engineering Bureau

GRF/dmk
Enclosure

cc: Susan McAnally, DSL, AMR Bureau

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Fish and Wildlife Enhancement
Federal Building, U.S. Courthouse
301 South Park
P.O. Drawer 10023
Helena, Montana 59626

RECEIVED
JAN 25 1991
ROBERT PECCIA
& ASSOCIATES

IN REPLY REFER TO:
FWE-61130-Billings
M.40-Montana Dept. of State Lands

January 23, 1991

Robert Morton, Reclamation Specialist
Robert Peccia and Associates
P.O. Box 5653
Helena, Montana 59601

Dear Mr. Morton:

The U.S. Fish and Wildlife Service (Service) received a request from Susan McAnally, Abandoned Mine Reclamation Bureau of the Montana Department of State Lands requesting Service comments on birds of high Federal interest that may be affected by abandoned mine reclamation projects. The four specific project sites identified were in Powell, Jefferson and Lewis and Clark counties.

Two species, the bald eagle (Haliaeetus leucocephalus) and peregrine falcon (Falco peregrinus), are endangered species that may occur within the proposed project areas. These species are provided protection by the Endangered Species Act (Act) of 1973, as amended. The Act requires Federal agencies to insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any listed species.

Both peregrine falcons and bald eagles may occur in the area as spring and/or fall migrants, and bald eagles may occur as year-long residents. We are not aware of peregrine falcon or bald eagle nest territories within the project area, nor are we aware of significant habitats for these species in the project area.

The Swainsons hawk is a candidate species being considered for listing as either endangered or threatened under the Act. One of the reasons the Service prepares Notices of Review for candidate species is to solicit information on candidate species that may assist the Service in any possible listing process. The Service recommends the Environmental Assessments (EA's) for these projects consider impacts, if any, to this species.

The Migratory Bird Treaty Act provides general protection to most species of migratory birds. Any unique nesting, wintering or other concentration areas for migratory birds in the project area should be addressed in the EA's. In addition, the Bald Eagle Protection Act extends additional protection to both bald and golden eagles, their nests and nest sites.

We appreciate your efforts to consider and conserve endangered species, migratory birds and their habitats. Questions regarding the Service's comments should be addressed to Dennis Christopherson (406-657-6750).

Sincerely,

Kemper McMaster
Field Supervisor
Montana/Wyoming Field Office

FOR

cc: Susan McAnally, Montana Dept. of State Lands (Helena, MT)
Billings Suboffice, USFWS, Fish & Wildlife Enhancement (Billings, MT)

DMC/dc

"Take Pride in America"

United States Department of Agriculture
Soil Conservation Service
91 N. Frontage Rd.
Deer Lodge, MT. 59722
(406)-846-1703

January 17, 1991

RECEIVED
JAN 21 1991
ROBERT PECCIA & ASSOCIATES

Robert Morton, Reclamation Scientist
Robert Peccia and Associates
P.O. Box 5663
Helena, MT 59601

Mr. Morton:

This letter is in response to a letter received from Susan McAnally, Abandoned Mine Reclamation Bureau, Dept. of State Lands, requesting comments, questions, and concerns on proposals to reclaim abandoned mines in Powell County.

I have consulted with the North Powell Conservation District board and asked for their input since they are very concerned about reclamation of active and abandoned mines in their district.

The board questions the choice of the Limestone Quarry site for possible reclamation. They were not aware of any potential hazardous problems from the site other than it is unsitely and is clearly visible from Highway 12. If that is the major concern and reason for the proposed reclamation then they feel that there are other sites in Powell County that would benefit more from reclamation.

One site specifically mentioned by the board was the mines in the upper drainage of Jefferson Creek. They would be located in Sections 31 and 32, T13N, R8W in Lewis and Clark County, but the majority of the drainage area is in Powell County. The board feels that these sites pose a high hazardous waste and sedimentation problem that needs to be dealt with.

Again, the conservation district board feels that abandoned mine sites that pose environmental and health hazards should be given priority for proposed reclamation measures.

Thank you for the opportunity to provide input into this matter and we hope the concerns expressed here are given some consideration.

Respectfully,

Stan T. Green
District Conservationist

jm

United States Department of Agriculture
Forest Service
Helena Ranger District
2001 Poplar
Helena, MT 59601

Reply to: 2810

Date: January 14, 1991

RECEIVED
JAN 16 1991
ROBERT PECCIA
& ASSOCIATES

Mr. Robert Morton
Robert Peccia and Associates
P.O. Box 5653
Helena, MT. 59601

Dear Sir;

This correspondence is in response to Ms. Susan McAnally's letter to the Helena Ranger District dated 1/7/91 regarding the Department of State Lands' Abandoned Mine Reclamation projects scheduled for 1991. In this letter Ms. McAnally informed the Forest Service of the Department's intent to prepare Environmental Assessments for 4 proposed reclamation projects in Powell, Jefferson and Lewis and Clark Counties. The Forest Service is asked to respond with comments, questions or concerns regarding these projects and to specifically comment as to how these various reclamation projects "...may affect future Forest Service Plans relative to the project areas."

As I have indicated in earlier correspondence relative to this matter, it is extremely difficult to formulate concerns, questions and comments on these projects at this time when the projects are still so vaguely defined. Aside from reiterating our concerns relative to the Helena Forest Travel Plan, we cannot provide much in the way of meaningful analysis until the project area has been defined to the point where we are able to distinguish between National Forest lands and lands under private or other ownership. Before we can provide you with meaningful feedback we must also be aware of the particular environmental problems associated with each site and what specific reclamation proposals are available for each of these sites.

Lacking this information I can only restate our intent to cooperate with the Department in this reclamation effort in any way possible. When site maps have been prepared which distinguish between public and private lands, and which at the minimum identify the environmental hazards existing at each site, the Forest Service will promptly respond with our concerns and comments.

On a related matter, copies of the 1/7/91 letter have been forwarded to the Lincoln Ranger District for their individual response to the Upper Blackfoot Mines project. As agreed in telephone conversation, the Lincoln

District will relay their specific concerns and comments directly to Robert Peccia and Associates.

In closing, let me once again express my appreciation in being included in the formulation of these much needed reclamation projects.

Sincerely,

Denis A. Hart

DENIS A. HART
District Ranger

CC: S. McAnally, DSL

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES
WATER QUALITY BUREAU

STAN STEPHENS, GOVERNOR

Room A-206
COGSWELL BUILDING

STATE OF MONTANA

FAX # (406) 444-2606-1374
Phone (406) 444-2406

[illegible] MONTANA 59620

RECEIVED
FEB 04 1991
ROBERT PECCIA
& ASSOCIATES

January 29, 1991

Robert Peccia, P. E.
Robert Peccia & Associates
P. O. Box 5653
Helena, MT 59604

Dear Bob:

Representatives of your firm have asked me about our policy regarding MPDES permits for wetlands designed to passively treat abandoned mine lands (AML) drainage when installed as a part of AML reclamation projects.

We would require MPDES permits and/or temporary turbidity variances during construction to minimize sedimentation problems instream. In the long term, however, assuming a monitoring program shows water quality improvement through the passive treatment, no MPDES permit will be required. The only exception to this that I can think of might be in a case where a poor quality seep might be proposed to be treated and discharged directly to a stream. In this case, the overall stream water quality might be made worse without strict quality limitations in a MPDES permit.

I hope this clarifies our position. If you have other questions, feel free to contact me at 444-2406.

Sincerely yours,

Frederick C. Shewman, P.E., Supervisor
Permits Section
Water Quality Bureau
Environmental Sciences Division

FCS:dd/954.S

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DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

STAN STEPHENS, GOVERNOR

STATE OF MONTANA

FAX # (406) 444-2606

COGSWELL BUILDING
HELENA, MONTANA 59620

RECEIVED
JAN 28 1991
ROBERT PECCIA
& ASSOCIATES

January 23, 1991

RECEIVED
JAN 24 1991
STATE LANDS

Susan McAnally
Abandoned Mine Reclamation Bureau
Department of State Lands
1625 Eleventh Avenue
Helena, MT 59620

Dear Susan,

Thank you for your letter requesting comments on the Bureau's jurisdiction over the reclamation efforts being carried out by DSL at the Upper Blackfoot, Nellie Grant and Limestone Quarry sites. Each of the three projects will require a 3A Authorization (Short-term Exemption form State Surface Water Quality Turbidity Standards) for the proposed reclamation activity, including access routes that may impact nearby waterbodies. In addition, the projects may require a MPDES discharge permit for any activity that may create a discharge to state waters. The project manager should request a determination from our permits section as to necessity of the discharge permit for each project. Please note also that the Bureau provides state certification for all individual 404 permit applications under consideration by the Corps of Engineers. DSL should also contact the Corps in regard to the necessary 404 permits.

The Bureau is interested in reviewing the EA for each of the projects to ascertain the potential water quality impacts of each project and to ensure that the selected alternatives have considered water quality and made all efforts to minimize or avoid impacts to state waters. We are also interested in the monitoring plans for each project in that we would expect water quality to be improved as a result of the project and believe that improvement should be well documented.

If you have any questions or need further information, please feel free to contact this office.

Sincerely,

Jack G. Thomas
Environmental Programs Supervisor
Water Quality Bureau

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Montana Department of Fish, Wildlife & Parks

RECEIVED
JAN 16 1991
ROBERT PECCIA & ASSOCIATES

1420 East Sixth Avenue
Helena, Montana 59620
January 15, 1991

Robert Morton, Reclamation Scientist
Robert Peccia & Associates
P.O. Box 5653
Helena, MT 59604

Dear Mr. Morton:

The letter from the Department of State Lands (DSL) on January 7, 1991, solicits written comments and suggestions concerning four proposed abandoned mine projects. The correspondence also seeks comments as to the jurisdiction the Department has over a project such as those proposed by DSL.

Section 87-5-501 through 87-5-509 of the Stream Protection Act (SPA) governs all projects sponsored by an entity of state government and is administered by the Department of Fish, Wildlife and Parks.

Site specific comments and recommendations for each project, will be provided to DSL upon receipt of an SPA application and other information as stipulated by the Act.

Sincerely,

Ken Chrest

Ken Chrest
Stream Protection Coordinator
Fisheries Division

drg
C: Vincent
Leathe
Workman
File

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU

STAN STEPHENS, GOVERNOR

STATE OF MONTANA

FAX # (406) 444-2606

HELENA, MONTANA 59620

(406) 444-3454
FAX (406) 444-1374

CEIVED
N 21 1991
RT PECCIA
& ASSOCIATES

January 17, 1991

Mr. Robert Morton
Robert Peccia and Associates
P. O. Box 5653
Helena, MT 59601

Dear Bob:

The following comments are in response to the letter dated January 7, 1991, from the Abandoned Mines Reclamation Bureau of the Department of State Lands concerning preparation of Environmental Assessments (EA) on four abandoned mine reclamation projects.

The first air quality consideration for these types of projects would be the need for an air quality permit. Any source that has the potential to emit more than 25 tons per year of any pollutant is required to obtain an air quality permit with a few exceptions (ARM 16.8.1102). This is determined on a project-specific basis. The primary pollutant emitted would be particulate matter from earth moving and material handling operations and vehicle traffic. Given the scope of these specific projects, air quality permits are not required because potential particulate emissions would be well below the 25 ton limit. For future reference, it is possible that an extensive long-term reclamation project could require an air quality permit.

Regardless of the need for a permit, ARM 16.8.1401 requires that reasonable precautions be taken to control fugitive dust emissions. For these types of projects, this would most likely involve watering of roads and work areas on an as-necessary basis.

Another air quality consideration is burning of site debris. ARM 16.8.1301-1308 set forth the open burning requirements. A trade waste open burning permit would be required from the bureau for burning demolition materials. Burning of treated lumber or timbers is prohibited.

There has not been any air monitoring at the specific project sites noted in the letter; however, generic statements regarding the lack of air pollutant sources in the areas can be made. These areas would be similar

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to the one described in the example EA I gave you during our recent meeting. On-site air monitoring would not be required on projects of this size.

If you have any questions, please contact me.

Sincerely,

Pat Driscoll
Environmental Engineer

PD:kmj

cc: Susan McAnally

United States Department of Agriculture
Soil Conservation Service
F.O.B. Drawer 10022
301 South Park
Helena, MT 59626
Phone: (406) 449-5278

January 15, 1991

RECEIVED
JAN 16 1991
ROBERT PECCIA & ASSOCIATES

Robert Morton, Reclamation Specialist
Robert Peccia and Associates
PO Box 5653
Helena, MT 59604

Dear Mr. Morton:

Per a request by Susan McAnally, Abandoned Mine Reclamation Bureau, the following are comments on proposals to reclaim abandoned mines in Powell, Jefferson and Lewis and Clark Counties:

1. Based upon our soils information, there does not appear to be any unique, prime or important agricultural lands present on any of the project locations.

2. We strongly encourage that species selection for the revegetation of these sites be adaptable with the material being stabilized, as well as be compatible with the surrounding land use and adjacent plant communities.

Thank you for the opportunity to comment.

Sincerely,

Warren Kellogg

Warren Kellogg
District Conservationist

WGK/cjo

c: Susan McAnally, DSL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

RECEIVED
JAN 15 1991
ROBERT PECCIA
& ASSOCIATES

Ref: 8MO

January 10, 1991

Ms. Susan McAnally
Department of State Lands
Abandoned Mine Reclamation
Bureau
1625 Eleventh Avenue
Helena, Montana 59620

Dear Ms. McAnally:

The U. S. Environmental Protection Agency (EPA) is pleased to respond to your request concerning the reclamation of four mine sites in western Montana. Your basic question on jurisdiction of these activities can be answered simply.

Those activities which are proposed to occur on Federal land are subject to the policies, procedures, and requirements of the National Environmental Policy Act (NEPA) (CFR 40 Parts 1500.1 - 1500.3). A Federal agency would then determine whether to prepare an environmental impact statement (EIS) or an environmental assessment (EA) (with a finding of no significant impact - CFR 40 Part 1501.3).

Upon review of these sites, EPA was concerned to see the Nellie Grant Mine listed as a proposed abandoned mine reclamation project. It is EPA's understanding that this mine did have a State operating permit with a reclamation bond of $62,000. Would not this money be directly available for reclamation purposes?

If you need further assistance, please contact me or Jeff Bryan of my staff at 449-5486.

Sincerely,

John A. Wardell, Director
Montana Office

cc: Robert Morton, Robert Peccia and Associates

APPENDIX D.

SITE PHOTOS

PHOTO 1 - Powell County Limestone Quarry, East Quarry air oblique, looking North.

PHOTO 2 - Powell County Limestone Quarry, West Quarry air oblique, looking South.